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that "Southern Michigan forms the western extension of what is perhaps the richest *Crataegus* region in the world." And further, "Judging from the material which I have seen from other parts of the lower peninsula and which is too incomplete for critical study, it seems probable that there are still a large number of unnamed species." With the prospect of seventy-five to eighty or more species of hawthorns in southern Michigan alone, the botanists of that state may confidently be expected to join the ranks of those who would restore the idea of species to its old significance.

Eventually most of these "species" will probably be sorted and arranged as interesting forms and varieties. As such they will be useful to the critical collector and field botanist. Possibly they may serve as examples of the "elementary species" of some recent writers, or of the "incipient" or "nascent" species of others. They are *not* the species of Gray, Torrey, Bentham, DeCandolle, or Linné.

CALIFORNIA COMPOSITES

IN marked contrast to the preceding paper is that of Mr. H. M. Hall, under the title of "Compositae of Southern California," in the University of California Publications (Vol. 3, No. 1, Dec. 28, 1907). The author, although dealing with about five hundred species, finds few new ones. The reason for this is suggested by the author's remark in the introductory chapter, where he says, "It should be noted that the number of species could be greatly augmented by recognizing numerous forms which have been described and given specific names, but which have been reduced to synonymy in this paper." A little later he gives his opinion "that the exaltation of trivial forms, distinguished only by one or two variable characters, to the rank of species is conducive neither to clearness nor to scientific accuracy." What he says further is so well said that it may be quoted with profit at this time when we are thinking seriously of the question of the nature and limits of species. "A rational system of classification should bring out the natural relationship between the various forms; should, in other words, repre-

sent the cleavage of the larger groups into their component parts as it has taken place in nature. Much of our recent work, however, has unfortunately consisted of a mere cutting across the grain, the result being a mass of chips—the so-called species—each being a purely artificial product and bearing no evident relationship to the others. This is commonly the result of hasty work where the perpetrator has been too busy to work out natural affinities through a comparison of intergrading forms accompanied by field study."

The Compositae of southern California as understood by the author are distributed by tribes as follows: *Eupatorieae*, 9 species; *Astereae*, 113; *Inuleae*, 25; *Ambrosieae*, 18; *Heliantheae*, 34; *Madieae*, 29; *Helenieae*, 86; *Anthemidieae*, 19; *Senecioneae*, 25; *Cynareae*, 17; *Mutisieae*, 2; *Cichorieae*, 68. These plants are distributed over six "life-zones," viz., Alpine, Hudsonian, Canadian, Transition, Upper Sonoran and Lower Sonoran, and the author discusses briefly the distribution of particular species in these zones. In passing we may notice that it is in the Transition zone that are found the extensive forests of yellow pine (*Pinus ponderosa*) and white fir (*Abies concolor*), while the Upper Sonoran zone "is essentially co-limital with the chaparral belt." In looking over the list we observe that there are no species of either *Eupatorium* or *Lacinaria* (*Liatris*), and that there are of *Solidago* 4 species; *Aster*, 17; *Erigeron*, 14; *Ambrosia*, 2; *Franseria*, 8; *Xanthium*, 2; *Helianthus*, 6; *Senecio*, 11; *Carduus*, 6.

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THE AMERICAN NATURE-STUDY SOCIETY

THE American Nature-Study Society was organized at Chicago on January 2, 1908. Its purposes, as stated in the adopted constitution, are: (1) To promote critical investigation of all phases of nature-study (as distinguished from technical science) in schools, especially all studies of nature in elementary schools; and (2) to work for the establishment in schools of such nature-study as has

been demonstrated valuable and practicable for elementary education.

Its membership consists of teachers and others who are interested in nature-study for schools and whose applications for membership have been approved by the council. The annual membership fee is one dollar, payable before February 1, or upon election to membership in case of new members.

The council for 1908 consists of the following officers:

President—L. H. Bailey, Cornell University.

Vice-presidents—C. F. Hodge, Clark University; F. L. Stevens, North Carolina College of Agriculture; V. L. Kellogg, Stanford University; W. Lochhead, Macdonald College, Quebec; F. L. Charles, DeKalb (Ill.) Normal School.

Secretary-Treasurer—M. A. Bigelow, Teachers College, Columbia University.

Directors (for two years)—D. J. Crosby, U. S. Department of Agriculture; C. R. Mann, University of Chicago; S. Coulter, Purdue University; H. W. Fairbanks, Berkeley, Cal.; M. F. Guyer, University of Cincinnati; (for one year)—O. W. Caldwell, University of Chicago; G. H. Trafton, Passaic, N. J.; F. L. Clements, University of Minnesota; Ruth Marshall, University of Nebraska; C. R. Downing, Marquette (Mich.) Normal School.

The constitution adopted provides for an official monthly journal to be published under the direction of the council; and the well-established journal of nature-study, *The Nature-Study Review*, will be transferred to the society. The annual subscription price (\$1.00) of this journal is included in the membership fee of the society (\$1.00) provided that this fee is paid in advance; but subscribers to *The Review* are not enrolled as members of the society unless elected after filing application. For the purpose of stimulating local interest, sections of the society will be organized in various states and cities. Annual meetings will be held, usually in connection with the national scientific or educational societies. A directory of members will soon be published and revised annually.

The Chicago meeting was well attended by scientific men and dozens of others who were unable to be present expressed great interest in the movement. It is very important that

at least one hundred fellows of the American Association for the Advancement of Science should be enrolled as members of the American Nature-Study Society. Their influence is greatly needed in the Nature-Study Society, directly, and indirectly, in establishing desirable relations with the American Association for the Advancement of Science.

For full information concerning the society, or in sending in applications for membership, address M. A. Bigelow, Secretary, Teachers College, New York City.

SCIENTIFIC NOTES AND NEWS

M. HENRI POINCARÉ, the eminent mathematician, has been elected a member of the French Academy, in the place of the late M. Berthelot.

THE Bruce gold medal of the Astronomical Society of the Pacific has been awarded to Professor Edward C. Pickering, director of Harvard College Observatory, for distinguished services to astronomy. This is the seventh award of the medal, the earlier medalists being Professor Simon Newcomb, Professor Arthur Auwers, Sir David Gill, Professor G. V. Schiaparelli, Sir William Huggins and the late Professor Hermann Carl Vogel.

THE council of the Royal Society of Arts has awarded the gold medal of the Shaw trust for industrial hygiene to Professor W. Galloway, in recognition of his researches into the action of coal dust in colliery explosions.

M. BOUQUET DE LA GRYE has been elected president of the Bureau des Longitudes for 1908, M. Poincaré vice-president and M. Bigourdan secretary.

DR. C. CHREE, F.R.S., has been elected president of the Physical Society of London.

THE University of Edinburgh purposes to confer its doctorate of laws on Sir Norman Lockyer, director of the Solar Physics Observatory, South Kensington, and editor of *Nature*.

THE jubilee of Calcutta University will be celebrated on March 14, when the degree of doctor of science will be conferred as follows: